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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,421	12/31/2003	Yan Zhou	75622P006401	4633

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EXAMINER
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SINGH, RAMNANDAN P

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 11/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/750,421

Applicant(s)

ZHOU, YAN

Examiner

Ramnandan Singh

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-22 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>Oct. 16, 2006</u> | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 10-17, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Pessl et al [Proc. of the 27<sup>th</sup> European Conf. On Solid-State Circuits, ESSCIRC 2001, Sept. 18-20, 2001; Pages 117-120].

Regarding claim 1, Pessl et al teach a subscriber line interface circuit apparatus shown in Fig. 2, comprising:

a first driver (i.e. programming) for driving a downstream data signal in a non-voiceband range and a metering signal onto a subscriber line [Page 119; Section 2.3], wherein data and voice blocks are separated [Page 118; Section 2 (Chip Architecture); Section 2.2 and Section 2.3];

a second driver for driving a downstream voice signal in a voiceband range onto the subscriber line, wherein the first driver is distinct from the first driver [Page 118; Section 2 (Chip Architecture); Section 2.2 and Section 2.3]; and

receiver circuitry coupled to provide an upstream data signal and an upstream voice signal from an upstream signal carried by the subscriber line, wherein the first driver and receiver circuitry reside on a same first integrated circuit die (IVAX) [Figs. 1-

2; Page 117, Right column, lines 1-10; Page 118; Section 2 (Chip Architecture); Section 2.1; Section 2.2 and Section 2.3].

Claim 12 is essentially similar to claim 1 and is rejected for the reasons stated above.

Regarding claim 20, the limitation is shown above.

Regarding claim 2, Pessl et al further teach the apparatus comprising : an upstream low pass filter providing a low pass filtered upstream signal as an upstream voice signal, wherein the upstream low pass filter resides on the first integrated circuit die (IVAX), wherein the low pass filtering is inherent in the ADSL over POTS application for POTS operation [Fig. 1; Page 117, right column, lines 6-10; Section 2.2; Section 2.3].

Claim 16 is essentially similar to claim 2 and is rejected for the reasons stated above.

Regarding claim 3, Pessl et al further teach the apparatus comprising : a downstream low pass filter providing a low pass filtered downstream voice signal to the second driver, wherein the downstream low pass filter resides on a second integrated circuit die (i.e. second block) ), wherein the low pass filtering is inherent in the ADSL

Art Unit: 2614

over POTS application for POTS operation [Fig. 1; Page 117, right column, lines 6-10; Section 2.2; Section 2.3].

Claim 17 is essentially similar to claim 3 and is rejected for the reasons stated above.

Regarding claim 4, Pessl et al further teach the apparatus, wherein the voiceband range is from approximately 300 Hz to 4 kHz, which is inherent in the POTS signals [Fig. 1; Page 117, right column, lines 6-10].

Claim 13 is essentially similar to claim 4 and is rejected for the reasons stated above.

Regarding claim 5, Pessl et al further teach the apparatus comprising : an upstream high pass filter providing a high pass filtered upstream signal as an upstream data signal, wherein the upstream high pass filter resides on the first integrated circuit die, wherein the high pass filtering is inherent in the ADSL over POTS application for ADSL operation [Fig. 1; Page 117, right column, lines 6-10; Section 2.2; Section 2.3].

Regarding claim 6, Pessl et al further teach the apparatus comprising: a downstream high pass filter providing a high pass filtered downstream data signal to the first driver, wherein the downstream high pass filter resides on a second integrated

circuit die, wherein the high pass filtering is inherent in the ADSL over POTS application for ADSL operation [Fig. 1; Page 117, right column, lines 6-10; Section 2.2; Section 2.3].

Regarding claim 10, Pessl et al further teach the apparatus: wherein a lower bound of the non-voiceband range is greater than 16 kHz, wherein this limitation is inherent with ADSL signal operation [Fig. 1; Page 117, right column, lines 6-10].

Claim 14 is essentially similar to claim 10 and is rejected for the reasons stated above.

Regarding claim 11, Pessl et al further teach the apparatus wherein the downstream data signal is a discrete multi-tone encoded signal [Page 120; Left column, lines 1-7].

Claim 15 is essentially similar to claim 11 and is rejected for the reasons stated above.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 7-8 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pessl et al as applied to claims 1 and 12 above, and further in view of Booth et al [US 5,835,533].

Regarding claim 7, although Pessl et al teach providing a metering signal [Page 119; Section 2.3], they do not teach expressly a metering signal cancellation circuit.

Booth et al teach a metering signal cancellation circuit (i.e. adaptive filter) shown in Fig. 7, wherein the metering signal cancellation circuit substantially cancels any metering signal present in the upstream voice signal [Fig. 7; col. 1, lines 11-49; col. 7, lines 21-55].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine Booth et al with Pessl et al in order to accommodate signals in the upstream direction so that the network can then serve for communication metering signals [Booth et al; col. 1, lines 29-35].

Claim 18 is essentially similar to claim 7 and is rejected for the reasons stated above apropos of claim 7.

Regarding claim 8, Booth et al teach the apparatus, wherein the metering signal cancellation circuit further comprises a finite impulse response filter responsive to the metering signal provided to the first driver [Fig. 7; col. 7, lines 21-35].

Claim 19 is essentially similar to claim 8 and is rejected for the reasons stated above apropos of claim 8.

5. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pessl et al applied to claim 20 above, and further in view of Gambuzza [US 6,226,331 B1].

Regarding claim 21, Pessl et al does not teach expressly the apparatus, wherein the first upstream driver is capacitor-coupled to the subscriber line.

Gambuzza teaches the apparatus shown in Fig. 4, wherein the first upstream driver is capacitor-coupled to the subscriber line [Fig. 4; col. 7, line 15 to col. 8, line 7]. It is nevertheless a teaching to one of ordinary skill in the art.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Gambuzza with Pessl et al in order to provide galvanic isolation between data communications equipment and a digital subscriber line (DSL) [Gambuzza; col. 1, lines 19-24].



Regarding claim 22, Gambuzza teaches the apparatus, wherein the first upstream driver (220) shown in Fig. 2 is transformer-coupled to the subscriber line [Fig. 2].

### ***Response to Arguments***

6. Applicant's arguments filed on Sep. 11, 2006 have been considered but are moot in view of the new ground(s) of rejection.

### ***Allowable Subject Matter***

7. Claim 9 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 9 recites the limitation, "the downstream data signal and the metering signal are weight coupled to the first driver wherein the weights permit varying the proportion of combination of the downstream data and metering signals". The prior art of record does not teach these limitations.

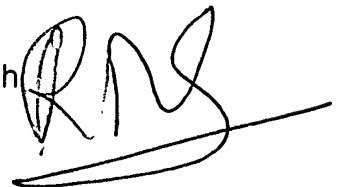
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose telephone number is (571) 272-7529. The examiner can normally be reached on M-TH (8:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ramnandan Singh  
Examiner  
Art Unit 2614

A handwritten signature in black ink, appearing to be 'RNS', with a long horizontal line extending from the bottom right.